

## CLAIMS

What is claimed is:

1. A method of constructing an ITE microphone earhook, comprising:  
attaching at least one conductor to at least one terminal on a microphone;  
electrically connecting at least one of the at least one conductor to at least one contact of a mating connector;  
carrying the at least one conductor within at least one cable;  
winding the at least one cable with at least one stiffening member;  
covering the wound at least one cable and at least one stiffening member with shrink tubing;  
filling the volume surrounding the at least one attachment of the at least one conductor and the at least one terminal on the microphone with potting compound; and  
covering the microphone and the at least one conductor with a boot.
2. The method of Claim 1 further comprising electrically connecting at least one of the at least one conductor to a bias setting resistor and the body of the mating connector.
3. The method of Claim 1 further comprising connecting the at least one stiffening member to a sleeve.
4. The method of Claim 3, wherein the step of filling the volume surrounding the at least one attachment of the at least one conductor and the at

least one terminal on the microphone with potting compound further comprises filling the volume surrounding the at least one attachment of the at least one conductor and the at least one terminal on the microphone and the volume surrounding the at least one connection of the at least one stiffening member to the sleeve with potting compound.

5. The method of Claim 3, wherein the step of covering the microphone and the at least one conductor with a boot further comprises covering the microphone, the sleeve, and the at least one conductor with a boot.

6. A method of constructing an ITE microphone earhook, comprising:  
attaching at least one conductor to at least one terminal on a microphone to form a first sub-assembly;  
attaching at least one stiffening member to a sleeve to form a second sub-assembly;  
inserting the first sub-assembly into the second sub-assembly;  
filling the resulting cavity in the sleeve containing the at least one conductor with potting compound;  
twisting the at least one stiffening member and the at least one conductor together;  
sliding shrink tubing over the at least one stiffening member and the at least one conductor to form a stalk;  
attaching a filter to the end of the sleeve opposite the stalk;  
inserting the microphone and stalk through the opening of a microphone boot;  
soldering a curved tube to a mating connector;  
inserting the stalk into the curved tube;  
soldering the at least one conductor to at least one terminal of the mating connector to form at least one connection; and

over molding the mating connector, curved tube, and adjacent end of the stalk.

7. The method of Claim 6 wherein attaching at least one conductor to at least one terminal on a microphone comprises attaching three conductors to three terminals on a microphone to form a first sub-assembly.

8. The method of Claim 6 wherein attaching at least one stiffening member to a sleeve comprises attaching two stiffening members to a sleeve to form a second sub-assembly.

9. The method of Claim 6 wherein attaching at least one stiffening member to a sleeve comprises attaching at least one stiffening member to a sleeve, wherein the sleeve is made from brass.

10. The method of Claim 6 wherein twisting the at least one stiffening member and the at least one conductor together comprises twisting the at least one stiffening member and the at least one conductor together to about 3 turns per inch.

11. The method of Claim 6 wherein soldering a curved tube to a mating connector comprises soldering a curved tube to a mating connector, wherein the mating connector is adapted to mate to a coaxial connector attached to a Behind The Ear (BTE) device, and wherein the mating connector and coaxial connector provide both a mechanical connection and an electrical connection.

12. The method of Claim 6 wherein soldering the at least one conductor to at least one terminal of the mating connector to form at least one connection comprises soldering the at least one conductor to at least one circuit

including at least one resistor, wherein the at least one circuit allows a three wire microphone to operate in a two wire mode.

13. A method of constructing an ITE microphone earhook, comprising:
  - attaching at least one conductor to at least one terminal on a microphone to form a first sub-assembly;
  - attaching at least one stiffening member to a sleeve to form a second sub-assembly;
  - inserting the first sub-assembly into the second sub-assembly, wherein the at least one conductor is guided into the end of the sleeve opposite the at least one stiffening member, and wherein the first assembly is inserted until the end of the microphone opposite the at least one conductor is flush with the end of the sleeve opposite the at least one stiffening member;
  - filling the resulting cavity in the sleeve containing the at least one conductor with potting compound;
  - allowing the potting compound to cure;
  - twisting the at least one stiffening member and the at least one conductor together as a group;
  - sliding shrink tubing over the at least one stiffening member and the at least one conductor up to the base of the sleeve, to form the ITE microphone stalk;
  - shrinking the shrink tubing;
  - attaching a filter to the end of the sleeve opposite the stalk;
  - inserting the microphone and stalk assembly, stalk first, through the large opening of a microphone boot;
  - soldering a curved tube to a mating connector;
  - inserting the stalk into the curved tube;
  - positioning the at least one stiffening member against the mating connector to establish the proper length of the stalk;

soldering the at least one stiffening member to the inside diameter of the mating connector;

soldering the at least one conductor to the appropriate at least one terminal of the mating connector to form at least one connection;

potting the volume around the at least one connection with epoxy to cover the at least one connection;

over molding the mating connector, curved tube, and adjacent end of the stalk with a medical grade PVC to form an ear hook to complete the ITE microphone earhook.

14. The method of Claim 13 wherein attaching at least one conductor to at least one terminal on a microphone comprises attaching three conductors to three terminals on a microphone to form a first sub-assembly.

15. The method of Claim 13 wherein attaching at least one stiffening member to a sleeve comprises attaching two stiffening members to a sleeve to form a second sub-assembly.

16. The method of Claim 13 wherein attaching at least one stiffening member to a sleeve comprises attaching at least one stiffening member to a sleeve, wherein the sleeve is made from brass.

17. The method of Claim 13 wherein twisting the at least one stiffening member and the at least one conductor together as a group comprises twisting the at least one stiffening member and the at least one conductor together as a group to about 3 turns per inch.

18. The method of Claim 13 wherein inserting the microphone and stalk assembly, stalk first, through the large opening of a microphone boot

comprises inserting the microphone and stalk assembly, stalk first, through the large opening of a microphone boot, wherein the boot is made from an elastomer.

19. The method of Claim 13 wherein soldering a curved tube to a mating connector comprises soldering a curved tube to a mating connector, wherein the mating connector is adapted to mate to a coaxial connector attached to a Behind The Ear (BTE) device, and wherein the mating connector and coaxial connector provide both a mechanical connection and an electrical connection.

20. The method of Claim 13 wherein soldering the at least one conductor to the appropriate at least one terminal of the mating connector to form at least one connection comprises soldering the at least one conductor to at least one circuit including at least one resistor, wherein the at least one circuit allows a three wire microphone to operate in a two wire mode.